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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/822,459	04/02/2001	Takahiro Abe	06753.0439	8959

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EXAMINER

NGUYEN, MINH DIEU T

ART UNIT PAPER NUMBER

2137

DATE MAILED: 02/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/822,459	Applicant(s) ABE ET AL.	
	Examiner Minh Dieu Nguyen	Art Unit 2137	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/1/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 30, 2005 has been entered.

2. This action is in response to the communication dated November 30, 2005 with the amendments to claims 1-3 and the addition of claims 4-15.

Claims 1-15 are pending.

Response to Arguments

3. Applicant's arguments with respect to claims 1-3 have been considered but are moot in view of the new ground(s) of rejection. Applicant's arguments focus on the combination of features introduced by the amendment with elements that already existed in the claims. The new material is rendered obvious by Sanders et al. (3,978,449), Finkelstein (5,060,265), Driscoll (6,760,440) and Norris (3,789,377).

4. Applicant's arguments filed November 30, 2005 regarding 101 rejections have been fully considered but they are not persuasive. The examiner maintains 101 rejection on claim 1.

As stated in the remarks that claims need to clearly recite statutory subject matter under the judicially recognized test set forth by the Federal Circuit and followed by the M.P.E.P. that the claimed language would produce a useful, concrete and tangible result, the language in claim 1 lacks tangible result, it is merely a mathematical operation. Applicant's arguments amount to a general allegation that claim 1 produces a "useful, concrete and tangible result" without specifically explaining to the merit.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claim 1 is rejected under 35 U.S.C. 101 because the language of the claim raises a question as to whether the claim is directed merely to an abstract idea (i.e. mathematical operation) which would not result in a practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. The term "large value relative to" in claims 1-3 is a relative term which renders the claim indefinite. The term "large" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

9. Claims 1-2 recite the limitation "the basic processing unit". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanders et al. (3,978,449) in view of Finkelstein (5,060,265).

a) As to claim 1, Sanders discloses a method for data transmission in digital data communications systems for generating a crypto code (Fig. 2, element A.sub.s) by carrying out exclusive-OR operations between a plaintext code (Fig. 2, element A) which is a secrecy object and a PN signal (Fig. 2, element 52, multi-stage shift register).

Sanders does not explicitly disclose the multi-stage shift register generates pseudo noise signal.

Finkelstein discloses linear feedback shift register (LFSR) are utilized in operations where the generation of a pseudonoise signal (PN) is required (col. 1, lines 17-20).

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ the use of linear feedback shift register for generating a pseudonoise signal as Finkelstein discloses in the system of Sanders so as the pseudonoise signal can be used to form a cryptographic code to securely protect communication data.

Sanders and Finkelstein do not explicitly disclose the least common multiple of the length of a PN signal cycle and the basic processing unit of the plaintext code has a large value relative to the PN signal cycle.

The examiner takes official notice that in arithmetic and number theory, the least common multiple or lowest common multiple or smallest common multiple of two integers a and b is the smallest positive integer that is a multiple of both a and b . According to this definition, if integer a is the basic processing unit of the plaintext code of even number of 8 bits and integer b is the length of a PN signal cycle with odd number of bits 15, then its least common multiple is 120, which is a large value relative to the PN signal cycle (i.e. 15). Therefore, the length of a PN signal cycle has to be an odd number of bits.

Sanders discloses the encoding technique employs an odd number of bits in the pseudo random sequence (col. 4, lines 31-33).

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ the use of odd number of bits in the pseudonoise cycle to form the least common multiple of the length of a PN signal cycle and the basic processing unit of the plaintext code has a large value relative to the PN signal cycle according to the arithmetic and number theory so as to effectively secure data communication.

b) As to claim 2, a deciphering method is an reverse operation of claim 1, Sander discloses decrypting method in Fig. 5. Please also see the address above claim 1.

c) As to claim 3, it is a claim of data communication system between a transmitter side and receiver side. Sanders discloses a data transmission system with a transmitter side (Fig. 1, element 10) and a receiver side (Fig. 1, element 30), where the transmitter side employs the enciphering method of claim 1 to encipher plaintext data and transmit enciphered data to the receiver side (see addressed above claim 1) and the receiver side employs the deciphering method of claim 2 to decipher the received, enciphered data to obtain the deciphered data (i.e. original plaintext data) (see addressed above claim 2).

12. Claims 4-5, 8-9 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanders et al. (3,978,449) in view of Finkelstein (5,060,265) and further in view of Driscoll (6,760,440).

Sanders and Finkelstein do not explicitly disclose the basic processing unit of the plaintext code is an even number and a multiples of 8 bits.

Driscoll discloses a stream cipher cryptosystem with plaintext size of 8 bits or 32 bits (col. 3, lines 12-17).

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ the use of having the plaintext code with even number and multiples of 8 bits in the system of Sanders and Finkelstein as Driscoll discloses so as to have standard plaintext size.

13. Claims 6-7, 10-11 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanders et al. (3,978,449) in view of Finkelstein (5,060,265) and further in view of Norris (3,789,377).

Sanders and Finkelstein do not explicitly disclose a bit length of the PN signal cycle is an odd number and is one of 7, 15, 23 and 63.

Norris discloses pseudo random sequence synchronization comprising pseudo random sequence has an odd number of bits and is one of 7, 15 and 63 (col. 3, lines 63-65).

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ the use of having bit length of PN signal cycle is an odd number and is one of 7, 15, 23 and 63 in the system of Sanders and Finkelstein as Norris teaches so as to produce effective result.

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Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh Dieu Nguyen whose telephone number is 571-272-3873. The examiner can normally be reached on M-F 6:00-2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emmanuel Moise can be reached on 571-272-3865. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2100.


mdn
2/8/06

Minh Dieu Nguyen
Examiner
Art Unit 2137


EMMANUEL L. MOISE
SUPERVISORY PATENT EXAMINER